Notes from Tuesday 3-27

Hawaiian Hotspot

Thin crust of BASALT

Open path

LOW gas

LOW silica

Just basalt

Pressure released daily

Yellowstone Hotspot

Thick Granite Crust

No open path

Rhyolite cap semi solid Over a basalt Pluton

HIGH gas

HIGH silica

Pressure has been building for +500,000 years

What determines chemical composition of magma

If it is just mantle material, mainly basaltic. Ocean hotspot

Ocean crust is basalt,

If it melts and works it way through the granitic base of the continents, there are many more minerals and gasses. Continental hotspot

Same as if it is at subduction zone, recycled material

This leads to thicker/gassier magma(rhyolite) and more violent eruptions

How does magma reach surface

* Less Dense than surroundings
* Low density RISES
* Still hot so find weak spot melts thru
* Pressure builds forcing it up also

Eruption

* Magma is now lava-
  + Flows and projectiles
* Ash into atmosphere
* Gasses ejected
  + WATER,N2, O2
  + Early atmosphere???

Inside the volcano

* Magma chamber(Pluton) is the pocket of magma
* Vent is escape route. Main is largest side are lateral vents
* Pipe is neck to chamber
* Crater is top of vent

Magma is liquid rocks and hot gasses

Pyroclastics (pieces of fire) anything ejected from vent

Pyroclastic flow- hot ash and gas flowing at fast rate down slope of volcano. DEADLY